



SHEET 1 OF 7

FORM PTO - 1449				ATTY DOCKET NO. ASC-061					
SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT				APPLICANTS: Lochtefeld et al.					
				SERIAL NO.: 10/629,498					
				FILING DATE: July 29, 2003					
				GROUP: Not yet assigned					
U.S. PATENT DOCUMENTS									
EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE		
75/KS	A2	4,885,614	12/5/1989	Furukawa et al.					
	A3	5,032,893	7/16/1991	Fitzgerald et al.					
	A4	5,084,411	1/28/1992	Laderman et al.					
	A5	5,091,767	2/25/1992	Bean et al.					
	A6	5,156,995	10/20/1992	Fitzgerald et al.					
	A7	5,256,550	10/26/1993	Laderman et al.					
FOREIGN PATENT DOCUMENTS									
EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
OTHER ART, JOURNAL ARTICLES, ETC.									
EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)								
75/KS	C4	Akatsu et al., "Wafer bonding of different III-V compound semiconductors by atomic hydrogen surface cleaning," <u>Journal of Applied Physics</u> , Vol. 90, No. 8 (October 15, 2001), pp. 3856-3862.							
	C5	Belgal et al., "A New Mechanism of Pipeline Defect Formation in CMOS Devices," <u>International Reliability Physics Symposium</u> , (1994), pp. 399-404.							
	C6	Bulsara et al., "Relaxed InxGal-xAs graded buffers grown with organometallic vapor phase epitaxy on GaAs," <u>Applied Physics Letters</u> , Vol. 72, No. 13 (March 30, 1998), pp. 1608-1610.							
	C7	Cullis et al., "Growth ripples upon strained SiGe epitaxial layers on Si and misfit dislocation interactions," <u>Journal of Vacuum Science and Technology</u> , A 12(4) (July/August 1994), pp. 1924-1931.							
	C8	Currie et al., "Carrier mobilities and process stability of strained Si n- and p-MOSFETs on SiGe virtual substrates," <u>Journal of Vacuum Science and Technology</u> , B 19(6) (November/December 2001), pp. 2268-2279.							
EXAMINER				DATE CONSIDERED 5/25/06					



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U.S. PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
ZKS	A8	5,323,031	6/21/1994	Shoji et al.			
	A9	5,659,187	8/19/1997	Legoues et al.		3	
	A10	5,801,085	9/1/1998	Kim et al.			
	A11	5,810,924	9/22/1998	Legoues et al.			
	A12	5,828,114	10/27/1998	Kim et al.			
✓	A13	5,937,274	8/10/1999	Kondow et al.			

FOREIGN PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)

OTHER ART, JOURNAL ARTICLES, ETC.

EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)
ZKS	C9 De Boeck et al., "Growth and structural characterization of embedded InAsSb on GaAs-coated patterned silicon by molecular beam epitaxy," <u>Applied Physics Letters</u> , 58 (9) (March 4, 1991), pp. 928-930.
	C10 Feenstra et al., "Scattering from strain variations in high-mobility Si/SiGe heterostructures," <u>Journal of Applied Physics</u> , 78 (10) (November 15, 1995), pp. 6091-6097.
	C11 Fitzgerald et al., "Dislocation dynamics in relaxed graded composition semiconductors," <u>Materials Science and Engineering</u> , B67 (1999), pp. 53-61.
	C12 Godbey et al., "A Si0.7Ge0.3 strained-layer etch stop for the generation of thin layer undoped silicon," <u>Applied Physics Letters</u> , 56 (4) (January 22, 1990), pp. 373-375.
✓	C13 Gonzales et al., "Advantages of thin interfaces in step-graded buffer structures," <u>Materials Science and Engineering</u> , B44 (1997), pp. 41-45.

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<b>FORM PTO - 1449</b> <b>SUPPLEMENTAL INFORMATION</b> <b>DISCLOSURE STATEMENT</b>				<b>ATTY DOCKET NO.</b> ASC-061 <b>APPLICANTS:</b> Lochtefeld et al. <b>SERIAL NO.:</b> 10/629,498 <b>FILING DATE:</b> July 29, 2003 <b>GROUP:</b> Not yet assigned					
<b>U.S. PATENT DOCUMENTS</b>									
<b>EXAM. INIT.</b>		<b>DOCUMENT NUMBER</b>	<b>DATE</b>	<b>NAME</b>	<b>CLASS</b>	<b>SUB CLASS</b>	<b>FILING DATE IF APPROPRIATE</b>		
JSKS	A14	6,576,532	6/10/2003	Jones et al.					
JSKS	A15	US 20020185686A	12/12/2002	Christiansen et al.					
<b>FOREIGN PATENT DOCUMENTS</b>									
<b>EXAM. INIT.</b>		<b>DOCUMENT NUMBER</b>	<b>DATE</b>	<b>COUNTRY CODE</b>	<b>CLASS</b>	<b>SUB CLASS</b>	<b>FILING DATE</b>	<b>ABSTRACT ONLY</b>	<b>ENGLISH LANG (Y/N)</b>
<b>OTHER ART, JOURNAL ARTICLES, ETC.</b>									
<b>EXAM. INIT.</b>	<b>OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)</b>								
JSKS	C14	Gray et al., "Effect of Anisotropic Strain on the Crosshatch Electrical Activity in Relaxed GeSi Films," <u>Physical Review Letters</u> , Vol. 86, No. 16 (April 16, 2001), pp. 3598-3601.							
	C15	Ha et al., "Anomalous Junction Leakage Current Induced by STI Dislocations and Its Impact on Dynamic Random Access Memory Devices," <u>IEEE Transactions on Electron Devices</u> , Vol. 46, No. 5 (May 1999), pp. 940-946.							
	C16	Knall et al., "The use of graded InGaAs layers and patterned substrates to remove threading dislocations from GaAs on Si," <u>Journal of Applied Physics</u> , 76 (5) (September 1, 1994), pp. 2697-2702.							
	C17	MacElwee et al., "High-Performance Fully Depleted Silicon-on-Insulator Transistors," <u>IEEE Transactions on Electron Devices</u> , Vol. 37, No. 6 (June 1990), pp. 1444-1451.							
<b>EXAMINER</b> JSKS				<b>DATE CONSIDERED</b> 5/25/06					



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	<b>SERIAL NO.:</b>	10/629,498
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	<b>GROUP:</b>	Not yet assigned

## U.S. PATENT DOCUMENTS

EXAM. INIT.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE

## FOREIGN PATENT DOCUMENTS

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## OTHER ART, JOURNAL ARTICLES, ETC.

EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)							
JS	C18	McCarthy et al., "Effect of threading dislocations on AlGaIn/GaN heterojunction bipolar transistors," <u>Applied Physics Letters</u> , Vol. 78, No. 15 (April 9, 2001), pp. 2235-2237.						
	C19	Meshkinpour et al., "Role of misfit dislocations on pseudomorphic high electron mobility transistor," <u>Applied Physics Letters</u> , 66 (6) (February 6, 1995), pp. 748-750.						
	C20	Mica et al., "Crystal defects and junction properties in the evolution of device fabrication technology," <u>Journal of Physics: Condensed Matter</u> , 14 (2002), pp. 13403-13410.						
	C21	Mormose et al., "Dislocation-free and lattice-matched Si/GaP1-xNx/Si structure for photo-electronic integrated systems," <u>Applied Physics Letters</u> , Vol. 79, No. 25 (December 17, 2001), pp. 4151-4153.						
	C22	Mooney et al., "Scanning x-ray microtopographs of misfit dislocations at SiGe/Si interfaces," <u>Applied Physics Letters</u> , Vol. 79, No. 15 (October 8, 2001), pp. 2363-2365.						
<b>EXAMINER</b> JS				<b>DATE CONSIDERED</b> 5/25/06				



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	GROUP: Not yet assigned

## U.S. PATENT DOCUMENTS

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## FOREIGN PATENT DOCUMENTS

EXAM. INIT.	DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)

## OTHER ART, JOURNAL ARTICLES, ETC.

EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)							
25/5	C23	Mooney et al., "SiGe TECHNOLOGY: Heteroepitaxy and High-Speed Microelectronics," <u>Annual Review of Materials Science</u> , 30 (2000), pp. 335-362.						
	C24	Mooney et al., "Thermal Stability of Strained Si on Relaxed Si <sub>1-x</sub> Ge <sub>x</sub> Buffer Layers," <u>Materials Research Society Symposium Proceedings</u> , Vol. 686 (2002), pp. A1.2.1-A1.2.6.						
	C25	Morris et al., "Structure property anisotropy in lattice-mismatched single heterostructures," <u>Journal of Applied Physics</u> , 71 (5) (March 1, 1992), pp. 2321-2327.						
	C26	Ohashi et al., "Simulation of dislocation accumulation in ULSI cells with STI structure," <u>Applied Surface Science</u> , (2003), pp. 1-7.						
	C27	Ramamohan et al., "Study of $\mu$ m-scale spatial variations in strain of a compositionally step-graded In <sub>x</sub> Ga <sub>1-x</sub> GaAs(001) heterostructure," <u>Applied Physics Letters</u> , 66 (7) (February 13, 1995), pp. 869-871.						
EXAMINER	25/1			DATE CONSIDERED 5/25/06				



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<b>FORM PTO - 1449</b>				<b>ATTY DOCKET NO.</b> ASC-061					
<b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT</b>				<b>APPLICANTS:</b> Lochtefeld et al.					
				<b>SERIAL NO.:</b> 10/629,498					
				<b>FILING DATE:</b> July 29, 2003					
				<b>GROUP:</b> Not yet assigned					
<b>U.S. PATENT DOCUMENTS</b>									
<b>EXAM. INIT.</b>		<b>DOCUMENT NUMBER</b>	<b>DATE</b>	<b>NAME</b>	<b>CLASS</b>	<b>SUB CLASS</b>	<b>FILING DATE IF APPROPRIATE</b>		
<b>FOREIGN PATENT DOCUMENTS</b>									
<b>EXAM. INIT.</b>		<b>DOCUMENT NUMBER</b>	<b>DATE</b>	<b>COUNTRY CODE</b>	<b>CLASS</b>	<b>SUB CLASS</b>	<b>FILING DATE</b>	<b>ABSTRACT ONLY</b>	<b>ENGLISH LANG (Y/N)</b>
<b>OTHER ART, JOURNAL ARTICLES, ETC.</b>									
<b>EXAM. INIT.</b>	<b>OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)</b>								
ZKS	C28	Samavedam et al., "Novel dislocation structure and surface morphology effects in relaxed Ge/Si-Ge(graded)/Si structures," <u>Journal of Applied Physics</u> , 81 (7) (April 1, 1997), pp. 3108-3116.							
	C29	Sleight et al., "Stress Induced Defects and Transistor Leakage for Shallow Trench Isolated SOI," <u>IEEE Electron Device Letters</u> , Vol. 20, No. 5 (May 1999), pp. 248-250.							
	C30	Soh et al., "Relation Between Etch Pit Pairs And Pipeline Defects In CMOS Device," <u>International Reliability Physics Symposium</u> , pp. 244-248.							
	C31	Su et al., "Effects of Dislocation and Bulk Micro Defects on Device Leakage," SEMICON Taiwan 2001, pp. 1-4.							
	C32	Thompson et al., "NMOS Device Characteristics in Electron-Beam-Recrystallized SOI," <u>IEEE Transactions on Electron Devices</u> , Vol. 40, No. 7 (July 1993), pp. 1270-1276.							
<b>EXAMINER</b> ZSLH					<b>DATE CONSIDERED</b> 5/23/04				



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FORM PTO - 1449	ATTY DOCKET NO. ASC-061
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## U.S. PATENT DOCUMENTS

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## FOREIGN PATENT DOCUMENTS

EXAM. INIT.	DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)

## OTHER ART, JOURNAL ARTICLES, ETC.

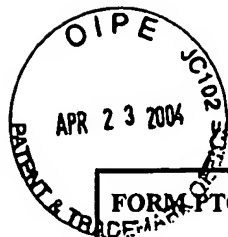
EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)							
JSK	C33	Tromp et al., "ADVANCES IN SITU ULTRA-HIGH VACUUM ELECTRON MICROSCOPY: Growth of SiGe on Si," <u>Annual Review of Materials Science</u> , 30 (2000), pp. 431-449.						
	C34	Wang et al., "PIPELINE DEFECTS IN CMOS MOSFET DEVICES CAUSED BY SWAMI ISOLATION," <u>International Reliability Physics Symposium</u> , (1992), pp. 85-90.						
	C35	Williams et al., "Evaluation of the Yield Impact of Epitaxial Defects on Advanced Semiconductor Technologies, 2000 IEEE/SEMI Advanced Semiconductor Manufacturing Conference, pp. 1-7.						
	C36	Wu, "Novel Etch-Stop Materials for Silicon Micromachining," Master of Science Thesis, Massachusetts Institute of Technology, 1997.						
	C37	Yamada et al., "Static analysis of off-axis crystal film growth onto a lattice-mismatched substrate," <u>Applied Physics Letters</u> , Vol. 79, No. 5 (July 30, 2001), pp. 608-610.						
EXAMINER	DATE CONSIDERED							

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<b>FORM PTO - 1449</b>				<b>ATTY DOCKET NO.</b> ASC-061					
<b>INFORMATION DISCLOSURE STATEMENT</b>				<b>APPLICANTS:</b> Lochtefeld et al.					
				<b>SERIAL NO.:</b> Not yet assigned.					
				<b>FILING DATE:</b> Herewith					
				<b>GROUP:</b> Not yet assigned.					
<b>U.S. PATENT DOCUMENTS</b>									
EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE		
73/KS	A1	6,555,880	04/29/2003	Cabral, Jr. et al.					
<b>FOREIGN PATENT DOCUMENTS</b>									
EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
<b>OTHER ART, JOURNAL ARTICLES, ETC.</b>									
EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)								
73/KS	C1	Nabarro, <u>Theory of Crystal Dislocations</u> (1967) pp. 33.							
↓	C2	Houghton, "Strain relaxation kinetics in Si <sub>1-x</sub> Ge <sub>x</sub> /Si heterostructures," <u>J. Appl. Phys.</u> , Vol. 70, No. 4 (August 15, 1991) pp. 2136-2151.							
↓	C3	Briel et al., "® "SMART CUT": A Promising New SOI Material Technology," <u>178 Proceedings 1995 IEEE International SOI Conference</u> (October 1995) pp. 178-179.							
<b>EXAMINER</b> 73/KS					<b>DATE CONSIDERED</b> 5/25/06				





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<b>U.S. PATENT DOCUMENTS</b>									
EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE		
JLS ↓	A16	5,357,119	10/1994	Wang et al.					
	A17	5,668,387	09/1997	Streit et al.					
	A18	5,844,260	12/1998	Ohori					
	A19	6,037,615	03/2000	Matsuyama et al.					
	A20	2003/0227057	12/2003	Lochtefeld et al.			10/2002		
	A21	2004/0005740	01/2004	Lochtefeld et al.			06/2003		
	A22	2004/0031979	02/2004	Lochtefeld et al.			06/2003		
<b>FOREIGN PATENT DOCUMENTS</b>									
EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
JLS ↓	B1	0 402 209	12/1990	EP				N	Y
	B2	0 523 487	01/1993	EP				N	N
	B3	1 197 992	04/2002	EP				N	Y
<b>OTHER ART, JOURNAL ARTICLES, ETC.</b>									
EXAM. INIT.	<b>OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)</b>								
JLS	C38	International Search Report for International Application No. PCT/US03/23804, 3/15/2004							
<b>EXAMINER</b> JLS					<b>DATE CONSIDERED</b> 5/25/06				

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